

The title and disclosure has been objected to due to minor informalities.

Again, the Applicants do not agree with the requirement that "piste" be removed from the application.

Enclosed herewith is a copy of the definition of the word "piste" from the Webster's Third New International Dictionary of the English Language Unabridged. Additionally, an inventor may be his own lexicographer and therefore the word does not have to be in common usage. Furthermore, the Applicants have historically used this term in their patents and thus prefer not to amend the language that has historically been used.

The specification has been objected to under 37 CFR 1.71 and the claims 19-25 have been rejected under 35 U.S.C. § 112, first paragraph.

The Examiner's rejection is respectfully traversed.

One skilled in the art would understand that during a purely electrical operation of the vehicle, all liquids such as hydraulic oil, fuel and so can be removed so that a weight reduction is achieved.

Additionally, according to the invention, the internal combustion engine is connected via a generator and at least one electric motor to each drive sprocket. Further, a shaft of a rotary snow plow is electrically driven and synchronized with the electric motor of the drive sprocket. The synchronization of the electric drive of the rotary snow plow and the electric motor for the respective drive sprocket is carried out electronically through the vehicle control unit. Consequently, a potentiometer could be used to adjust the electronical synchronization by the vehicle control unit.

With respect to the optimization of consumption, it is explained on page 8, last paragraph, to page 9, second paragraph, that a consumption optimum speed is selected for a

power output required. Thereby, operative states which are disadvantageous for the consumption can be avoided in the partial load range. This is due to the fact that more than one operative state in the partial load range can deliver a required power output.

Claims 1-3, 5-7, 9, 10, 17-19, 22-26 and 28 have been rejected under 35 U.S.C. § 112, second paragraph.

The claims have been amended to obviate this rejection.

Claims 1, 2, 5, 6, 9, 10, 17 and 28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Logan Manufacturing Company, PCT Publication No. WO 94/09548, in view of Buchdrucker, U.S. Patent No. 5,018,592.

The Examiner's rejection is respectfully traversed.

Claim 1 as now amended, is directed to a tracklaying vehicle comprising a vehicle control unit and an internal combustion engine. The internal combustion engine is drivingly connected via a gear to drive a sprocket of at least one track. Accessory drives for additional devices are mountable on the tracklaying vehicle and for vehicle components such as a tilting device for platforms. An internal combustion engine is connected via a generator and at least on electric motor and a gear to each drive sprocket. An electric motor is switchable as a current generator for accessory drives designed as a hydraulic or electric drives. The electric drive for a shaft of the additional device is electronically synchronized with the electric motor of the drive sprocket through the vehicle control unit.

The synchronization of the electric drive of the rotary snow plow and the electric motor with respect to the drive sprocket is carried out electronically through the vehicle control unit 28. The electrical synchronization guarantees a stepless synchronizing. Buchdrucker '592 does not teach a step with an electronic synchronization but discloses a mechanical system for

coupling of the vehicle speed and the rotary speed of the rotary plow shaft. This coupling is not variable, thus the teaching of Buchdrucker '592 is not a synchronization but only a single-stage reducing gear. Thus, the combination of Logan in view of Buchdrucker '592, does not teach the Applicants' invention nor render it obvious.

The remaining claims are all dependent from claim 1. Thus, as the independent claim 1 is patentable over the prior art of record, the remaining claims dependent therefrom are also patentable.

In view of the foregoing, it is believed that the amended claims and the claims dependent there from are in proper form. The Applicants respectfully contend that respectfully contend that the teachings of Logan, WO 94/09548 in view of Buchdrucker '592 does not establish a *prima facie* case of obviousness under the provisions of 35 U.S.C. Thus, claims 1-3, 5-7, 9, 10, 17-19, 22-26 and 28 are considered to be patently distinguishable over the prior art of record.

The application is now considered to be in condition for allowance, and an early indication of same is earnestly solicited.

Respectfully submitted,



Arlene J. Powers  
Registration No. 35,985  
Samuels, Gauthier & Stevens  
225 Franklin Street, Suite 3300  
Boston, Massachusetts 02110  
Telephone: (617) 426-9180  
Extension 110

vehicle is prevented from rolling by means of power-supplied electric motors, the accelerator is operated and the piste-maintenance vehicle is moved in the end. In a development of the invention, the parking brake is operated automatically, a release of the parking brake being effected during start upon operation of the accelerator.

A stopping operation during uphill or downhill driving is effected by means of a safety logic in that in successive order the accelerator position is moved to the zero position, whereby the piste-maintenance vehicle is slowed down in a controlled manner and stopped, the vehicle is prevented from rolling by a further power supply to the electric motors, the parking brake is automatically operated after a defined stopping time, and the power supply to the electric motors is terminated and the internal combustion engine is further operated in the idling speed mode. The traveling direction switch can then be moved to the neutral position.

The above-described control by means of a setpoint or by means of the safety logic can be performed through a separate electronic control means or an electronic means contained in the vehicle control unit or the electronic high-performance means.

Advantageous embodiments of the present invention will now be explained and described in more detail with reference to the figures attached to the drawing, in which:

Fig. 1 is a block diagram regarding drive and supply of a tracklaying vehicle;

Fig. 2 shows various variants of arranging electric motors and gears;

Fig. 3 is a side view of a first embodiment of a tracklaying vehicle;[ and]

Fig. 4 is a side view of a further embodiment of a tracklaying vehicle of the invention[.] ;  
and

Fig. 5 is a side view of a further embodiment of a tracklaying vehicle of the invention.

Fig. 1 is a block diagram for drive and supply with additional devices and further vehicle components.

An internal combustion engine 2 is drivingly connected to a generator 10 for producing electric energy. Furthermore, the internal combustion engine 2 drives a dynamo 27 by which a corresponding vehicle battery 26 can be charged.

An electronic high-performance means 21 which can be fed with current from the generator 10 is centrally arranged in the tracklaying vehicle 1, of which Fig. 1 only shows the principle. The electronic high-performance means 21 controls downstream electric motors 11, 12 for driving the tracklaying vehicle 1. These motors are drivingly connected via corresponding gears 3,13,14 to the drive sprockets 4 of the tracks of the tracklaying vehicle 1.

Energy and information flows between the individual components are represented in Fig. 1 by the directions of arrows. For instance, energy flows from the electronic high-performance means 21 via the electric motors 11, 12 and gears 3,13,14 to the drive sprockets 4. During downhill driving or in the overrun mode the drive sprockets 4 inversely drive the electric motors 11, 12 via the gears 3,13,14 so that these motors can be used as generators and feed energy back via the electronic high-performance means 21.

Furthermore, there is provided a vehicle control unit 28 which on the basis of corresponding predetermined setpoints of accelerator 29 and steering wheel 30 controls as a setpoint transmitter both the internal combustion engine 2 and the electronic high-performance means 21 and transmits the setpoints as control

components, there is maximum freedom of design by virtue of the electrical connection of said components; as a consequence, it is possible to arrange the drive train on the tracklaying vehicle in different ways. In the illustrated embodiment, the electric motor 11 is directly assigned to the drive sprocket 4 which drives a track 5.

The tracklaying vehicle 1 comprises as further vehicle components 15, 16 a loading platform 31 and a driver's cab 32. These parts are tiltable by electric or electrohydraulic drives [(not shown)] 52.

A control block 22 and 23, respectively, is arranged at the front and at the rear of the tracklaying vehicle 1. By analogy with Fig. 1, the block is designed with an electrohydraulic drive 18 as the accessory drive 6. These control blocks 22, 23 serve, for instance, to operate an adjusting means for push frame, [front snow plow blower] or device carrier, which are not illustrated for the sake of simplicity. Reference numerals 9 and 18a outline only the principle of a front snow plow blower to be arranged on the corresponding front device carrier 18a of the tracklaying vehicle 1.

The vehicle control unit 28 and a diagnosis means 25 are arranged inside the driver's cab. The diagnosis means serves maintenance and inspection purposes. The diagnosis means can also be arranged at a different location of the tracklaying vehicle 1.

Fig. 4 is a side view illustrating a further embodiment of a tracklaying vehicle 1. Like reference numerals designate like parts and are only mentioned in part.

At the rear of the tracklaying vehicle 1, a rotary snow plow with a downstream smoothing blade is arranged as an additional device 8. The snow plow comprises a shaft which is driven by an electric drive 19. The additional device 8 is adjustably and

pivotably supported at the rear of the tracklaying vehicle 1 via a corresponding kinematic adjusting means with electrohydraulic drive 18.

The kinematic adjusting means for the additional device 8 can be operated via the rear control block 23, the electrohydraulic drive 18 being contained in the rear control block 23 in such a case.

A winch which comprises a reel with an electric drive 19 is arranged as a further additional device 7 on the loading platform 31.

Further additional devices or vehicle components, such as track tensioner 56, parking brake 58, [front device carrier,] snow plow blower 62 or the like, are [not] shown in Figs. 3[ and 4] , 4 and 5 [for reasons of simplification].

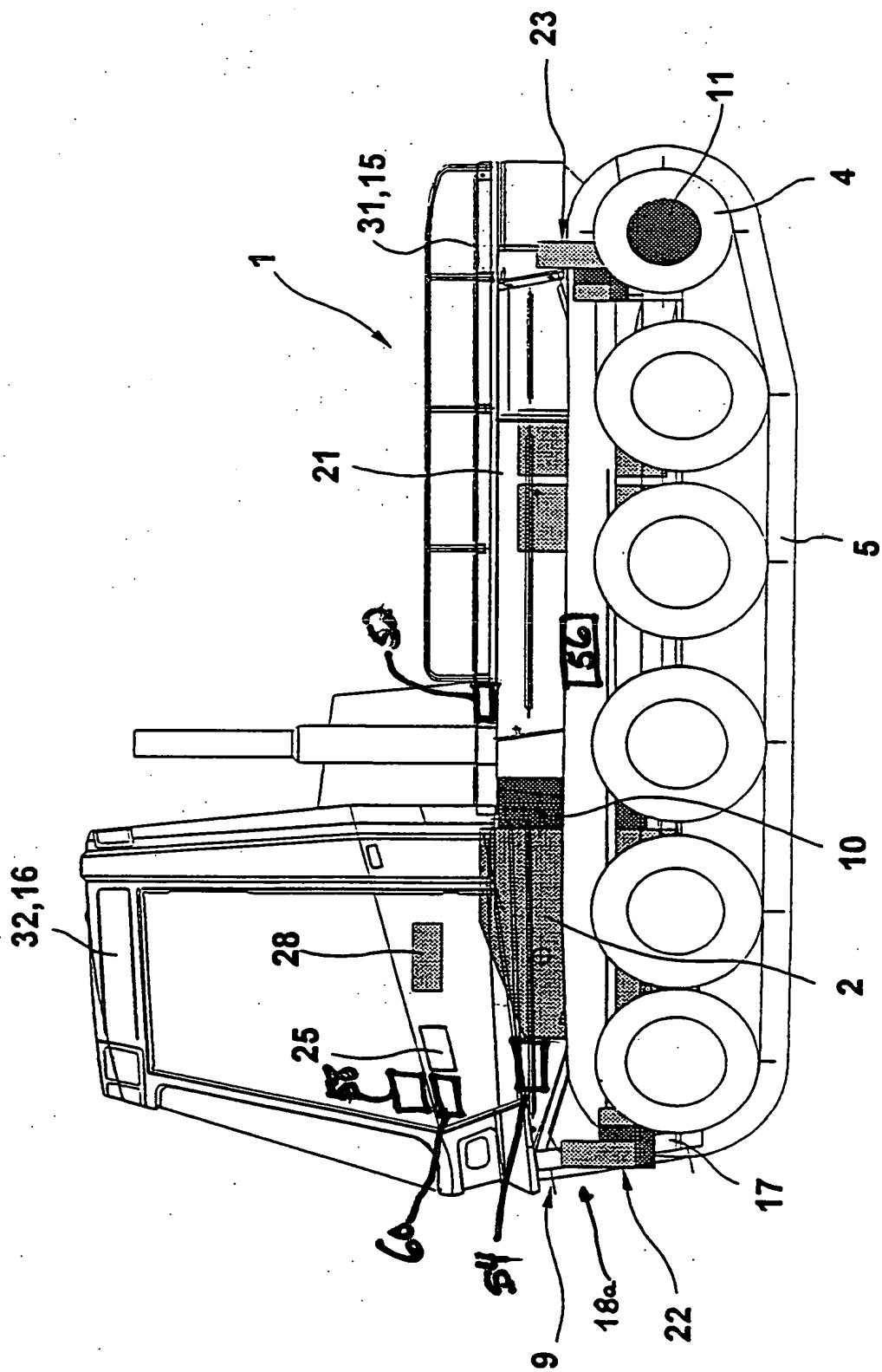


FIG.3



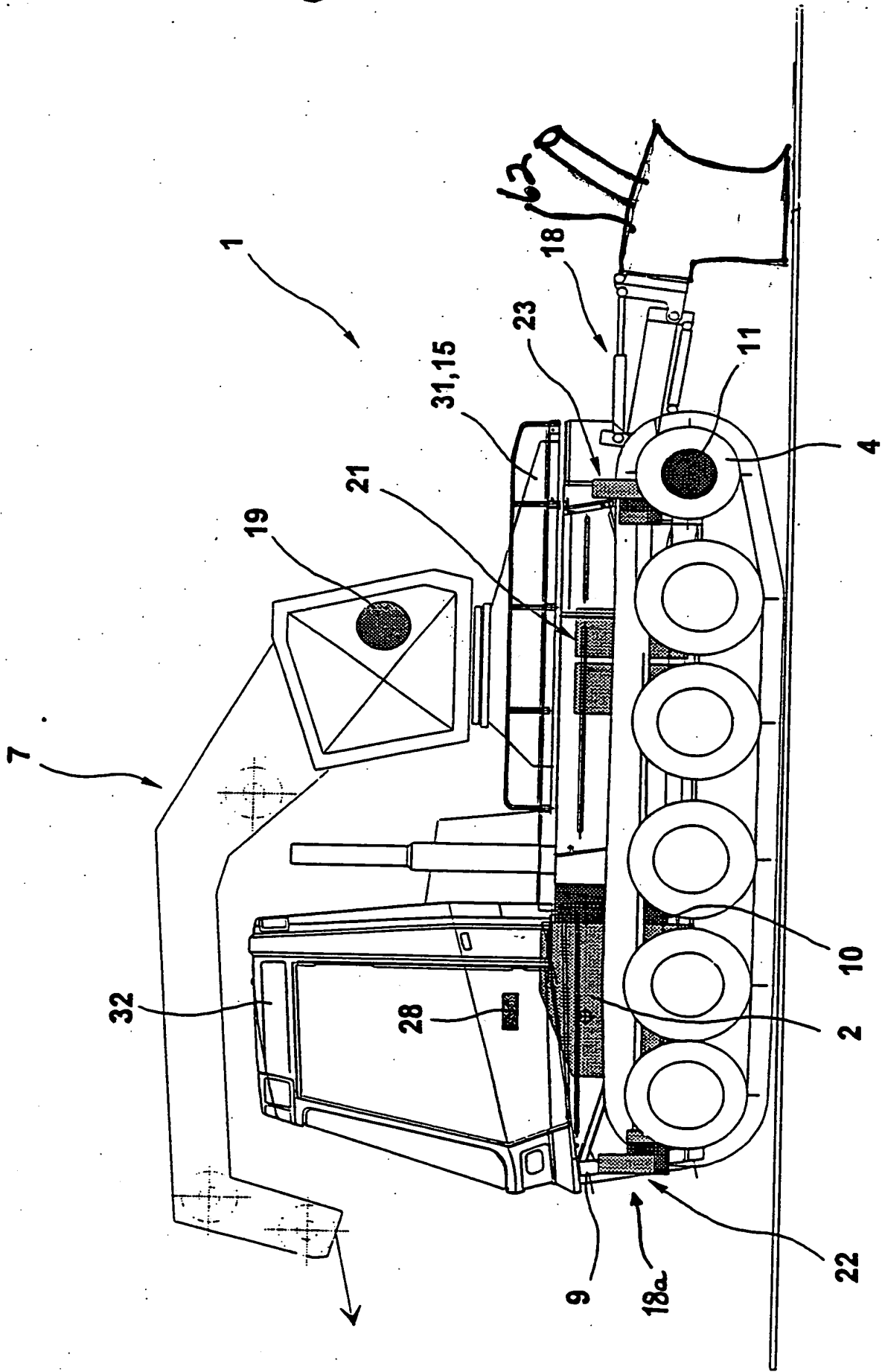


FIG. 5